High Power 980 nm Laser

Model 1921A/B/C

DATA SHEET

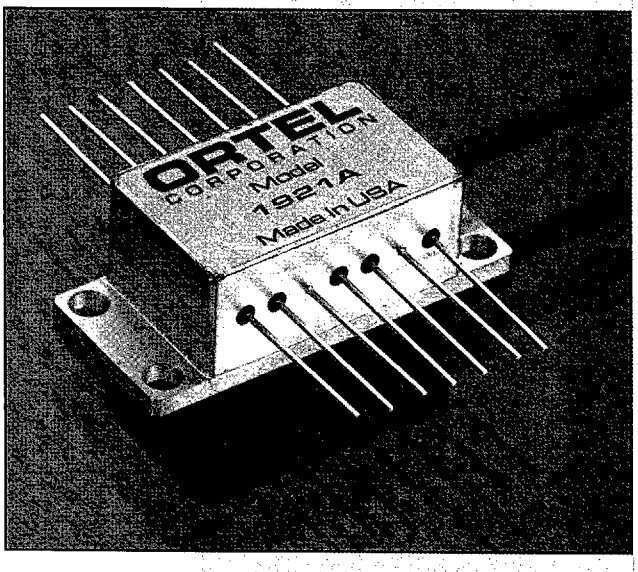
The 1921A/B pump laser is a high power 980 nm laser device in a 14 pin butterfly package with a thermoelectric cooler and monitor photodiode. The laser is designed as a pump source for Erbium-Doped Fiber Amplifier (EDFA) applications, and is available in standard powers from 90 to 150 mW (other powers are available upon request).

High reliability is achieved using Ortel's proprietary non-absorbing facet technology along with a hermetically sealed package. Life tests have demonstrated a failure rate of less than 500 FITs (failures in 10^9 hours).

Stable optical spectrum is achieved by using an external Fiber Bragg Grating. Wavelength selection is available. The package dimension and pinouts are industry compatible.

- **High Power: 90 mW to 150 mW**
- **Reliable: <500 FITs**
- **Stable Spectrum: with Fiber Bragg Grating**
- **Wavelength Selectable**
- **Industry Compatible Package and Pin-outs**
- **ISO 9001 Certified**

Model #	Kink Free Output Power (mW)	Max. Operating Current (mA)
1921A/B/C - 090	90	220
1921A/B/C - 100	100	230
1921A/B/C - 110	110	250
1921A/B/C - 120	120	270
1921A/B/C - 130	130	290
1921A/B/C - 140	140	310
1921A/B/C - 150	150	320



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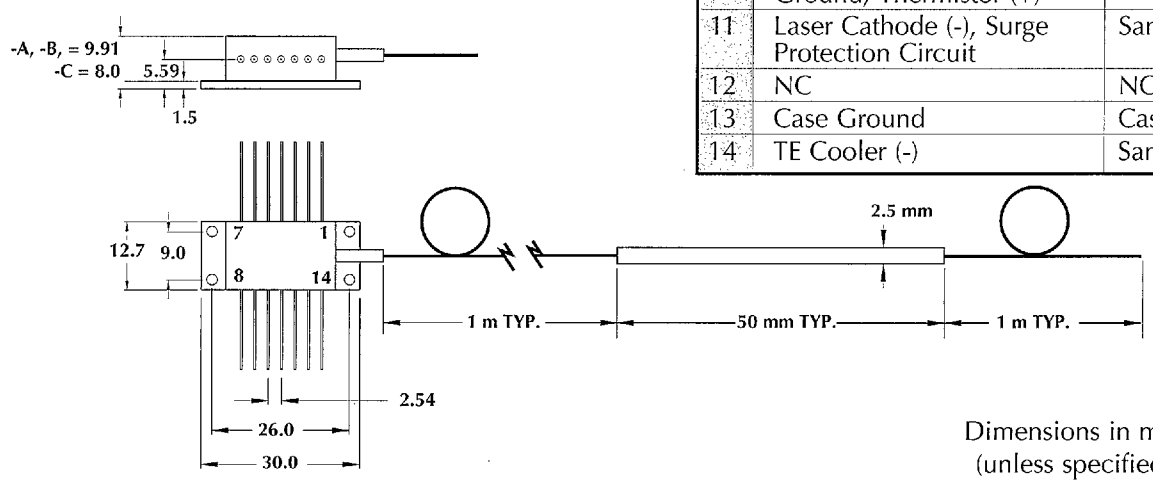
High Power 980 nm Laser

Parameter (measured at 25° C laser temperature)	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength [1]	λ_C	975	980	985	nm
Threshold Current	I_{TH}	-	20	35	mA
Operating Laser Forward Voltage	$V_{F,\,op}$	-	1.8	2.4	V
Monitor Current @ $I_{F,\,op}$	I_{RMON}	200	-	3000	µA
Monitor Dark Current @ $I_F = 0$ and $V_{R,\,MON} = 5.0V$	I_D	-	0.01	0.1	µA
TEC Capacity[2]	ΔT	45	-	-	°C
TEC Current @ $\Delta T = 45°$ C, $I_{F,op}$	I_{TEC}	-	0.7	1.0	A
TEC Voltage @ $\Delta T = 45°$ C, $I_{F,op}$	V_{TEC}	-	2.0	2.5	V
Thermistor Resistance @ 25°C	R_{th}	9.5	10	10.5	KΩ

1. Measurements are performed at IF,op with >50 dB optical return loss from the fiber front end.
2. ΔT is defined as the difference between the case temperature and the laser temperature.

Maximum Rating Parameters	Sym	Min.	Max.	Unit
Operating Temperature Range	T_C	-20	70	°C
Storage Temperature Range	T_{st}	-20	70	°C
DC Forward Drive Current	I_F	-	400	mA
Optical Output Power	P_o	-	180	mW
Laser Reverse Voltage	V_R	-	2	V
TEC Current	I_{TEC}	-	1.5	A
Monitor Reverse Bias	$V_{R,\,MON}$	-	10	V
Temperature Sensor Current	I_{TS}	-	5	mA

Pin#	1921A	1921B/C
1	TE Cooler (+)	Same
2	Thermistor (-)	Same
3	Monitor PD Anode (-Bias)	Same
4	Monitor PD Cathode (+Bias)	Same
5	Case Ground, Thermistor (+)	Thermistor (+)
6	NC	Same
7	NC	Same
8	NC	Same
9	NC	Same
10	Laser Anode (+), Package Ground, Thermistor (+)	Laser Anode (+)
11	Laser Cathode (-), Surge Protection Circuit	Same
12	NC	NC
13	Case Ground	Case Ground
14	TE Cooler (-)	Same



Dimensions in mm
(unless specified)

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Safety Considerations – The light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid looking directly into the fiber pigtail or into the collimated beam along its axis when the device is in operation. Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard.

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